WHAT IS CLAIMED IS:

1. A process for aseptic processing of a food containing solid particles, the process comprising the steps of:

(a) providing a particulate food processing system including:

(i) a first chamber;

(ii) a second chamber;

(b) creating a condition of sterility in said second chamber;

(c) heating said food particles in said first chamber in a bulk sterilization step, at a temperature above the ambient temperature, so as to produce sterilized food particles;

(d) transferring said sterilized food particles to said second chamber, and

(e) flash cooling said sterilized food particles in said second chamber while maintaining said condition of sterility in said second chamber.

2. The process of claim 1, further comprising the step of:

(f) controlling a water balance within said second chamber during step (e), so as to retain a physical integrity of said sterilized food particles.

3. The process of claim 1, further comprising the step of:

(f) controlling a water balance within said second chamber during step (e), such that a requisite amount of water for flash evaporating is delivered, while maintaining a pre-determined liquid level in said second chamber.

4. The process of claim 2, wherein step (f) includes returning condensate evaporated from said second chamber.

5. The process of claim 4, wherein said condensate is a sterile condensate.

6. The process of claim 4, wherein said condensate is produced in a condenser disposed within said second chamber.

7. The process of claim 2, wherein step (f) includes introducing aseptic water from an external source to said second chamber.

8. The process of claim 2, wherein said external source is a pure water source.

9. The process of claim 2, wherein said external source includes aseptic water from said first chamber.

10. The process of claim 1, further comprising the step of:

(f) condensing water that was evaporated in step (e), wherein said condensing is performed in situ within said second chamber.

11. The process of claim 1, further comprising the step of:

(f) creating a condition of sterility in a vessel for receiving said food particles from said second chamber.

12. The process of claim 1, wherein steps (c), (d), and (e) are continuous process steps.

13. The process of claim 1, wherein said first chamber includes a solids conveying unit that enables a substantially constant residence time for said food particles undergoing said bulk sterilization step in said first chamber.

14. The process of claim 13, wherein said solids conveying unit includes a screw conveyor.

15. A system for aseptic processing of food containing solid particles, the system comprising:

(a) a chamber for performing bulk sterilization of food containing solid particles, so as to obtain sterile solid particles;

(b) a flash-cooling chamber for aseptic flash cooling of said sterile solid particles under vacuum;

(c) a condenser, fluidly connected to said flash-cooling chamber, said condenser for condensing water vapor from said flash-cooling chamber;

(d) a water inlet for delivering said aseptic water to a liquid phase of said flash chamber, said aseptic water delivered from an aseptic water source, and

(e) a control system for maintaining a presence of aseptic water within said flash-cooling chamber so as to retain a physical integrity of said sterilized food particles.

16. The system of claim 15, wherein said chamber for performing said bulk sterilization is a first chamber, said flash-cooling chamber is a second chamber, the system further comprising:

(f) a mechanism for transferring said sterile food particles from said first chamber to said second chamber.

17. The system of claim 16, further comprising:

(g) a solids conveying unit, disposed within said first chamber, for providing a substantially constant residence time for said food particles undergoing said bulk sterilization.

18. The system of claim 16, further comprising:

(g) a solids conveying unit, disposed within said flash-cooling chamber, said solids conveying unit designed and configured for segregating a flow of said sterile food particles with respect to said liquid phase in said flash-cooling chamber.

19. The system of claim 18, wherein said solids conveying unit includes a screw conveyor.

20. The system of claim 15, wherein said condenser is disposed within said flash-cooling chamber.

21. The system of claim 15, wherein said aseptic water includes aseptic condensate from said condenser.